



Great Lakes Update

Origins of the Detroit District, 1820 - 1865

The Detroit District of the U.S. Army Corps of Engineers was officially established in 1841 and covers 82,000 square miles of land. Currently inhabited by about 14 million people, with 4,000 miles of Great Lakes shoreline, the District includes parts of Minnesota, Wisconsin, Indiana and the entire state of Michigan. While the Detroit District's current mission is very broad, this article chronicles its early history.

Lewis Cass' Expedition

With the westward expansion of the United States in the early 1800s came an interest in exploration of the Great Lakes region. On May 24, 1820 an expedition led by Michigan's Territorial Governor Lewis Cass set out to explore the Great Lakes. The expedition party left from Detroit in thirty-foot birch bark canoes.

Accompanying Cass was Captain David Bates Douglass, an Engineer Officer in the U.S. Army Corps of Engineers. As a topographer, Captain Bates was tasked with mapping the 4000 mile journey. Later that summer and after spending a few days at Mackinac Island, the expedition reached a small trading settlement on the southern shore of the St. Marys River, Sault Ste. Marie. Cass and his associates knew of the geographic significance of Sault Ste. Marie and were given the mission of establishing a new military outpost. The United States had, by authorization

of prior Treaties, the right to establish this post. Cass was to set limits to the claim and allow the Native American population continued privileges.

After a few tense negotiations including one that ended with the hoisting of the British flag by a young Chippewa Chief, the United States claimed a four square mile parcel of land, which began two miles above the rapids, ended two miles below the rapids and extended back from the river. The Native Americans kept access to the land and were granted silver and other goods.

On June 17, 1820, Lewis Cass wrote to Secretary of War John C. Calhoun, of the importance of the Sault: "This position and the Island of Michlimackinac (Mackinac) are of paramount importance in any systematic arrangement for the defense of this country." The construction of Fort Brady was completed by 1822 and life at Sault Ste. Marie revolved around operations at the Fort.

Early Civil Works Projects

Population boomed in the Great Lakes region during the 1820s and it was quickly realized that navigation on the Great Lakes needed vast improvement. In 1823 President James Monroe sent ranking members of the War Department's Board of Engineers for Fortifications to make a harbor survey of Presque Isle at Erie, Pennsylvania. Congress authorized Army

Engineers to perform the survey. The Army Engineers noted that Erie Harbor was one of the best on lake, but a sandbar obstructed the entrance. They recommended building piers to direct the current so as to deepen the channel.

The Presque Isle Survey of 1823 was an important historical milestone in the association of civil works projects, especially those dealing with rivers and harbors, with the U.S. Army Corps of Engineers.

The 1823 Congressional authorization for the use of Army Engineers to perform surveys was followed by the more sweeping legislation known as the General Survey Act passed in 1824. This act gave the President the authority to initiate surveys and estimates for improvements based on national importance from a military or commercial point of view. Congress, in 1824 granted additional approval and \$20,000 in funds to improve the Harbor at Erie.

1825 saw the completion of the Erie Canal, linking the Hudson River to Lake Erie. Then in 1826 Congress approved funding for improvements to two more Great Lakes harbors, Buffalo, NY and St. Joseph, MI.

In 1828, Brigadier General Charles Gratiot was named as Chief of the Army Engineers, replacing Major General Alexander Macomb. General Gratiot, replying to a Congressional request, reported in December of 1828 that 44 river and harbor projects across the Great Lakes were in various stages of improvement.

Among the harbors soon to be improved was La Plaisance Bay, MI at the extreme western end of Lake Erie. La Plaisance Bay was the port for the town of Monroe, MI located 4 miles up the River Raisin. In 1829 a survey was initiated to determine the feasibility of linking La Plaisance Bay with Monroe on the River Raisin. Then in 1830, a timber crib breakwater was completed to

provide a harbor of refuge in western Lake Erie to encourage settlement of the area.

The need for maintenance on the La Plaisance Bay breakwater was almost immediate. On October 24, 1831 a violent storm carried away most of the structure. A new, longer breakwater was built in 1835 and remained in good condition for two years. Ice and storms during the winter of 1837 and spring of 1838 badly weakened the structure leading Lieutenant Colonel James Kearney, an engineer in the Corps of Topographical Engineers to report from his Detroit office, "it continues in a progressive state of dilapidation and if much longer neglected will go into utter ruin."

At the same time as the maintenance work on the La Plaisance Bay structure, a canal linking the navigable portion of the River Raisin to Lake Erie was proposed. The mouth of the River Raisin was closed to navigation by a 6,000 foot wide sand bar. The goal of this project was two-fold, first to create a new harbor of refuge and second to provide navigation to Monroe.

Lake Survey

Captain William G. Williams was named General Superintendent of Harbor Improvements on the south shore of Lake Erie in 1838. When he took office, it was too late in the year to make changes to ongoing work. But from his office in Buffalo, Captain Williams used the solid ice cover on Lake Erie to make a trigonometrical survey of the lake. Captain Williams proceeded to write the Chief of the Corps of Topographical Engineers Colonel John J. Abert, "all the principal data necessary to enable a judicious projection of plans for the enlargements and improvement of Buffalo and Black Rock Harbor."

It was Captain Williams' hope that a trigonometrical survey be carried out for an entire lake or for all the Great Lakes. If completed, it

would be possible to determine the exact position of permanent landmarks, as well as the depth of the lake in relation to the landmarks. This information would be useful for both navigation interests and planning improvements.

On March 3, 1841, Congress appropriated \$15,000 for a survey of the northwestern lakes. Captain Williams was instructed to take charge of the survey in May and United States Lake Survey was born. Based in Detroit, Lake Survey published navigation charts for the Great Lakes as part of the Detroit District of the U.S. Army Corps of Engineers until the establishment of the National Oceanic and Atmospheric Administration (NOAA) in 1970.

Other notable contributions made by Captain Williams include the suggestion of a canal connecting Lake Superior and Lake Huron at Sault Ste. Marie and a request for improving the channels making up the St. Clair Flats. He also pleaded with his superior officers to gain appropriations to build more harbors of refuge on the Great Lakes. In response to several disasters involving lost vessels, Captain Williams sent a letter to Colonel Abert in December of 1842 stating, "The late gales and numerous disasters that have been the result of want of proper protection to lake navigation." Captain Williams realized that developing every harbor was not feasible, but stated, "There are some points on the lake which, it seems to me, the government is called upon to emphatically protect."

During his tenure on the Great Lakes, Captain Williams saw navigation increase by leaps and bounds. Commerce increased at an annual rate of seventeen percent from 1841 – 1846.

One of Captain Williams' final accomplishments before leaving the Great Lakes was the submission of plans for a survey boat. The contract for the boat was let in January of 1843. Then in December of that year the *Colonel Abert*

was launched at Buffalo. The *Colonel Abert* was the first of many iron survey vessels built in the 1840s. She was renamed the *Surveyor* in 1848.

Captain Williams was reassigned as Chief Topographical Engineer in General Zachary Taylor's Army during the war with Mexico. He was killed in the Battle of Monterey on September 26, 1846.

Lieutenant Colonel James Kearney replaced Captain Williams as head of survey operations. Under Colonel Kearney, the Office of the Survey of the Northern and Northwestern Lakes was moved from Buffalo to Detroit. In 1852 a complete chart of Lake Erie was completed in Detroit. This chart along with ones of the Bass Islands and the west end of Lake Erie were the first official charts from the U.S. Lake Survey. They were freely available to any American or Canadian vessel navigating the Great Lakes.

Improvements to the Connecting Channels

In July of 1856, Congress appropriated \$45,000 in order to make improvements to the St. Clair Flats and Lake George in the St. Marys River. Included in the appropriation was a stipulation that a dredging machine be built for use at both locations. Colonel Abert nominated head of Survey operations at Detroit, Captain John N. Macomb to direct the projects based on his local knowledge and prior involvement. Secretary of War, Jefferson Davis, denied Captain Macomb's nomination, stating the importance of having Macomb in New Mexico. Colonel Abert's next choice was Captain Amiel Weeks Whipple. Secretary Davis approved the nomination on October 8, 1856 and Captain Whipple was assigned responsibility to both the St. Clair Flats and St. Marys River projects. Captain Whipple is considered the first District Engineer or Commander of the Detroit District. At the same time Colonel Kearney returned to lead Survey operations until May of 1857, when he was

replaced by Captain George Gordon Meade. Captain Meade remained as the Survey lead until September 1861.

Navigation interests on the Great Lakes were concerned that the \$45,000 would be largely spent on the purchase of equipment rather than work. They approached Congress in 1857 asking if the improvements in the connecting channels could be done under contract. On February 9, 1857, 49 Senators lead by Lewis Cass signed a letter to Secretary Davis “earnestly recommending that a contract be entered into for the accomplishment of the St. Clair Flats improvement.” On February 12, Colonel Abert, upon approval from Secretary Davis, gave instructions to Captain Whipple to let a contract for a channel 250 feet wide and 13 feet deep. One week later, Captain Whipple advertised for bids in Detroit and Buffalo newspapers.

Early bid results were poor. One prospective bidder commented, “No person would propose to excavate a channel 250 feet wide without knowing the length of the channel, the number of yards to be excavated and the distance to which the earth should be moved.” In fact only one bid was received by early March and it was deemed unacceptable for various reasons. Captain Whipple passed these results onto Colonel Abert with an urgent request for new instructions as the work season was soon at hand.

A new administration in place in March of 1857, meant an inopportune time for quick decisions. Secretary of War John B. Floyd notified Colonel Abert on May 22, that Captain Whipple “make a contract upon the best terms he can.”

Captain Whipple’s new contract for the St. Clair Flats project followed formulas used in the successful St. Marys River improvements contract let with Theodore D. Barton and J.C. Osgood on April 4, 1857. Captain Whipple was given much more freedom on the St. Marys

project and the agreement called for the contractors to use their own equipment to dredge 1,000 cubic yards per day. On May 25, the new notice for bids on the St. Clair Flats project appeared in Detroit and Buffalo papers. Theodore Barton again submitted the winning bid and he signed the contract on June 19.

Many new appropriations were needed to continue work on the St. Clair Flats and St. Marys River projects. Modifications to the plans were also made on several occasions based on new survey information and ever increasing ship size.

On April 3, 1861 the Army Garrison at Fort Sumter was attacked, sparking the Civil War. Captains Whipple and Meade soon found themselves with little to do in Detroit as most funding was directed to the war effort. At the onset of the war, ninety-three officers were serving in either the Topographical Corps or the Corp of Engineers. Fifteen joined the Confederacy and fifty-five became Generals. The most decorated was General George Meade. As Commander of the Army of the Potomac, General Meade defeated General Robert E. Lee’s Army at Gettysburg on July 3, 1863.

In June 1861, Captain Whipple was named Chief Topographical Engineer under General Irvin McDowell and served at Bull Run. He was later promoted to Brigadier General of Volunteers and commanded a division in defense of Washington D.C. On May 3, 1863, General Whipple was mortally wounded at the Battle of Chancellorsville. He was promoted to Major General of Volunteers shortly before his death.

Just prior to General Whipple’s death, the Corps of Topographical Engineers was abolished and its duties were merged with the U.S. Army Corps of Engineers. Since then the Detroit District has served and responded to the war and peacetime needs of our nation as part of the world’s premier public engineering organization.